Test Report No. 7191078052-MEC14/1-OKH
dated 17 Jan 2014

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SUBJECT:

Large scale surface spread of flame test on "GREENLAM" Type-F, HGF Building material submitted by Greenlam Asia Pacific Pte Ltd on 06 Jan 2014.

TESTED FOR:

Greenlam Asia Pacific Pte Ltd
11 Sungei Kadut Crescent
Singapore 728683

DATE OF TEST:

09 Jan 2014

PURPOSE OF TEST:

To determine the tendency of the surface of a material or a combination of materials to support the spread of flame across its surface and to classify the surface according to the test given in British Standard 476 : Part 7 : 1997.

The test was conducted at TÜV SÜD PSB's fire test laboratory located at No. 10 Tuas Avenue 10, Singapore 639134.

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ACCREDITED LABORATORY SAC-SINGLAS

LA-2007-0380-A
LA-2007-0381-F
LA-2007-0382-B
LA-2007-0383-G
LA-2007-0384-G
LA-2007-0385-E
LA-2007-0386-C
LA-2010-0464-D

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests/Calibrations marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

Laboratory:
TÜV SÜD PSB Pte. Ltd.
No.1 Science Park Drive
Singapore 118221

Phone : +65-6885 1333
Fax : +65-6776 8670
E-mail: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223

DESCRIPTION OF SPECIMENS:

Nine pieces of specimen, said to be "GREENLAM" (0.8mm thick) Type-F, HGF Building material comprising of High Pressure Laminates, each of nominal size of 885mm x 270mm were submitted. The Adhesive and Additives used were said to be Phenol-formaldehyde and Die-ethyl Glucose (DEG) respectively. The Fire Retardant used was said to be Ammonium Bromide. The bulk density of the specimen was found to be approximately 1522kg/m^3. Nine pieces of specimen, each with "GREENLAM" Type-F, HGF Building material adhered onto one face of an approximately 6mm thick calcium silicate board, each of nominal test size of 885mm x 270mm were prepared.

TEST PROCEDURE:

Prior to test, the specimens were prepared and conditioned in accordance with paragraphs 5.3 to 5.6 of the standard and secured to a specimen holder as described in paragraph 6.3.

Six specimens, backed with calcium silicate board, were tested with the Laminate (smooth) face exposed to the specified thermal radiation from the apparatus described in paragraph 6.1 of the standard. The intensity of the radiated heat incident on the specimen varies with distance from the hotter end, so that when the specified calibration panel is mounted in the place to be occupied by the specimen, the irradiance of the radiometer is as given in Table 1. The test was terminated when the flame front reached the 825mm reference line, or after 10 minutes has elapsed, whichever is the shorter.

Table 1 : Irradiance Along Horizontal Reference Line on the Calibration Board

Distance along reference line from inside edge of specimen holder	Irradiance kW/m^2		
mm	specified	min.	max.
75	32.5	32.0	33.0
225	21.0	20.5	21.5
375	14.5	14.0	15.0
525	10.0	9.5	10.5
675	7.0	6.5	7.5
825	5.0	4.5	5.5

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RESULTS OF TEST:

Specimen No.	1	2	3	4	5	6
Spread of flame at first 1½ minutes (mm)	0	0-75	0	0	0	0
Distance (mm)	Time of spread of flame to indicated distance (minutes • seconds)					
Start of flaming	nil	0.53	nil	nil	nil	nil
75 165 190 215 240 265 290 375 455 500 525 600 675 710 750 785 825 865	-	-	-	-	-	-
Time of maximum spread of flame (minutes • seconds)	-	1.00	-	-	-	-
Distance of maximum spread of flame (mm)	0	0-75	0	0	0	0
Comments	None					

Classification of Surface Spread of Flame

Classification	Spread of flame at 1.5 min.		Final spread of flame	
	Limit (mm)	Limit for one specimen in sample (mm)	Limit (mm)	Limit for one specimen in sample (mm)
Class 1	165	165 + 25	165	165 + 25
Class 2	215	215 + 25	455	455 + 45
Class 3	265	265 + 25	710	710 + 75
Class 4	Exceeding the limits for class 3			

CONCLUSION:

In accordance with the class definitions specified in the Standard, the test results show that the sample tested has a Class One Surface Spread of Flame.

REMARKS:

The test results relate only to the behaviour of the test specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Ong Kian Huat
Higher Associate Engineer

Chan Lung Toa
Product Manager
(Fire Property)
Mechanical Centre

PSB Singapore

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July 2011